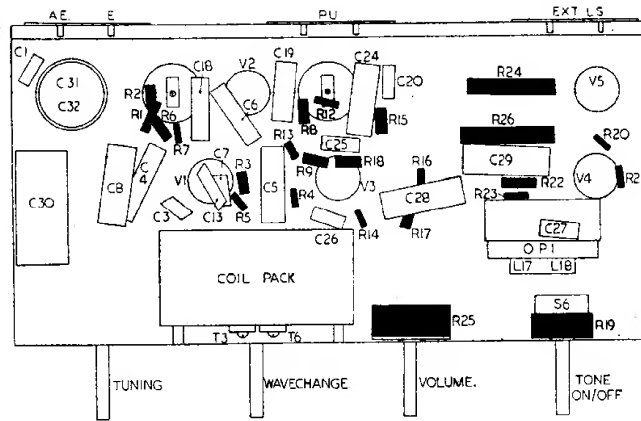


# ALBA 4551

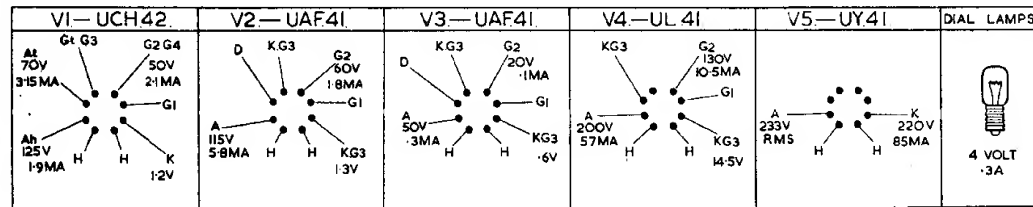


Five-valve three-waveband superhet with sockets for high-impedance gramophone pickup and low-impedance extension speaker. Figured walnut veneered console cabinet. For 200-250V 40-100 c/s AC. Made by A. J. Balcombe, Ltd., 52-58, Tabernacle Street, London, EC2.



## INDUCTORS

L	Ohms	L	Ohms	L	Ohms
1 ...	.25	9 ...	1.5	16 ...	5.5
2 ...	very low	10 ...	.75	17 ...	200
3 ...	.6	11 ...	4.5	18 ...	.3
4 ...	2	12 ...	1.2	19 ...	2.5
5 ...	.75	13 ...	6.5	20 ...	.75
6 ...	17.5	14 ...	6.5	21 ...	140 Total
7 ...	very low	15 ...	5.5	22 ...	25 Total
8 ...	.25				



AERIAL is fed through C1 to series-connected coupling coils L1 (SW), L3 (MW), L5 (LW). Unused coils are shorted out by S1. The grid coils L2 (SW), L4 (MW), L6 (LW), which are trimmed by T1, T2, T3 respectively, are switched by S2 to aerial tuning capacitor VC1, and through C3 to g1 of triode-hexode frequency changer V1. AVC is fed from g1 through R3 and decoupled by R9, C6. Cathode bias is provided by R4 decoupled by C5. Screen (g2, g4) voltage is obtained from potential divider R1, R2 decoupled by C4. Primary L13, C9 of IFT1 is in the hexode anode circuit.

Oscillator is connected in a tuned-grid shunt-fed circuit. The grid coils L7 (SW), L9 (MW), L11 (LW), which are trimmed by T4, T5, T6, C17, and padded by C14, C15, C16, are switched by S3 to oscillator tuning capacitor VC2 and through C7 to oscillator grid (g1) of V1. Automatic bias for grid is developed on C7 with R5 as leak resistor. Anode reaction voltages are obtained inductively from series-connected coils L8 (SW), L10 (MW), L12 (LW), and fed by C13 to oscillator anode of V1, of which R6 is the load resistor. S4 shorts out the unused coils.

IF amplifier operates at 460 kc/s. Secondary

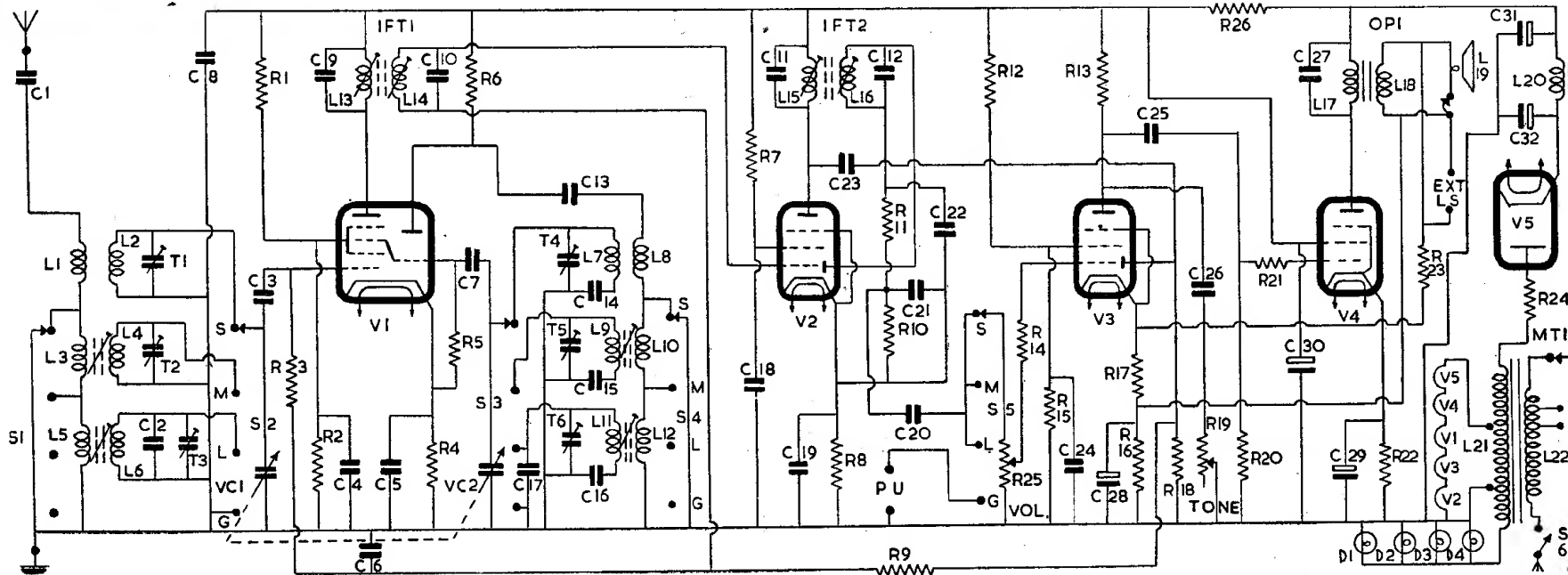
## RESISTORS

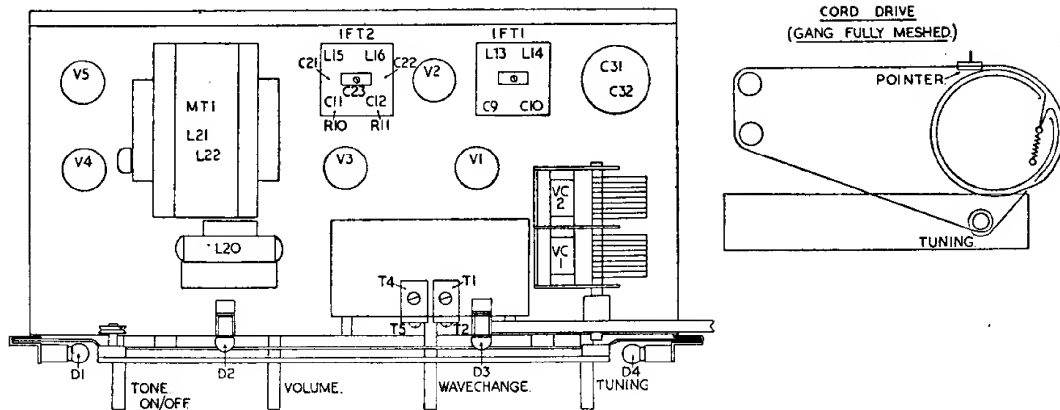
R	Ohms	Watts	R	Ohms	Watts
1 ...	18K	...	14 ...	47K	...
2 ...	27K	...	15 ...	200K	...
3 ...	1M	...	16 ...	3.3K	...
4 ...	220	...	17 ...	30	...
5 ...	47K	...	18 ...	1M	...
6 ...	22K	...	19 ...	1M Potr. with Switch	...
7 ...	47K	...	20 ...	560K	...
8 ...	300	...	21 ...	10K	...
9 ...	1M	...	22 ...	150	...
10 ...	470K	...	23 ...	500	...
11 ...	47K	...	24 ...	100	...W.W.
12 ...	560K	...	25 ...	1M	... Potr.
13 ...	220K	...	26 ...	1.5K	...

## CAPACITORS

C	Capacity	Type
1 ...	200pF Mica	
2 ...	56pF Silver Mica*	
3 ...	100pF Silver Mica	
4 ...	.05 Tubular 500V	
5 ...	.1 Tubular 350V	
6 ...	100pF Silver Mica	
7 ...	.25 Tubular 350V	
8 ...	100pF Silver Mica	
9 ...	110pF Silver Mica	
10 ...	100pF Silver Mica	
11 ...	110pF Silver Mica	
12 ...	110pF Silver Mica	
13 ...	100pF Silver Mica	
14 ...	5600pF Silver Mica	
15 ...	575pF Silver Mica	
16 ...	200pF Silver Mica	
17 ...	47pF Silver Mica	
18 ...	.05 Tubular 350V	
19 ...	.05 Tubular 350V	
20 ...	.005 Tubular 500V	
21 ...	100pF Silver Mica	
22 ...	100pF Silver Mica	
23 ...	12pF Silver Mica	
24 ...	.1 Tubular 350V	
25 ...	.005 Tubular 500V	
26 ...	.005 Tubular 500V	
27 ...	.005 Tubular 500V	
28 ...	25 Electrolytic 25V	
29 ...	25 Electrolytic 25V	
30 ...	16 Electrolytic 350V	
31 ...	32 Electrolytic 350V	
32 ...	32 Electrolytic 350V	

\*Not fitted on model tested





L14, C10 of IFT1 feeds signal and AVC voltages, decoupled by R9, C6, to g1 of diode-pentode. IF amplifier and signal rectifier valve V2. Cathode bias is provided by R8 decoupled by C19. Screen (g2) voltage is obtained from R7 decoupled by C18. Primary L15, C11, of IFT2 is in the anode circuit.

**Signal rectifier.**—Secondary L16, C12, of IFT2 feeds signal to single diode anode of V2. R10 is its load and R11, C21, C22 form an IF filter.

**AF amplifier.**—C20 feeds rectified signal to S5 which, in its three radio positions, passes the signal on to volume control R25, and thence through stopper R14 to g1 of pentode section of V3. Cathode bias is provided by R16 decoupled by C28. Negative feedback from secondary of output transformer is introduced into the cathode circuit by R17. Screen (g2) voltage is obtained from potential divider R12, R15, decoupled by C24.

R13 is the anode load and C26, R19 connected between anode and chassis give variable top cut tone control.

**Pickup.**—Sockets are fitted for permanent connection of any high-impedance gramophone pickup. In GRAM position of S5, which is ganged to the wavechange switch, pickup signal is fed to volume control R25 and thence through R14 to g1 of V3. Whilst pickup is in use g1 and g2 of V1 are earthed by S2, S3, through their respective coupling capacitors C3 and C7.

**AVC.**—The diode of V3 is used for this purpose. C23, feeds signal at anode of IF amplifier V2 to diode anode of V3. R18 is its load and R9, C6 decouple feed to control grids of V1, V2. Cathode bias developed on R16 provides the delay voltage for AVC diode.

**Output stage.**—C25 feeds signal through grid stopper R21 to g1 of pentode output valve V4. R20 is the grid load. Cathode bias is provided by R22 decoupled by C29. Screen (g2) voltage is obtained from R26 decoupled by C30. Primary L17 of output matching transformer OPI is in the anode circuit. C27 gives fixed tone correction.

Secondary L18 feeds signal to an 8 inch PM loudspeaker L19. Sockets are fitted on L18 for connection of a low-impedance extension speaker. A plug link enables the internal speaker to be switched off.

**Negative feedback** from secondary L18 of OP1 is applied by R23, R17 to cathode of AF amplifier V3.

HT is provided by an indirectly-heated half-wave rectifier V5. Its anode voltage is supplied by the full secondary winding L21 of mains input transformer MT1. R24 is surge limiter. Choke-capacity smoothing is given by L20, C31, C32.

Heaters of V1 to V5 are series coupled and obtain their current of .1A from tappings on secondary L21 of MT1.

**Dial lights** also obtain their current from a tapping on L21. Primary L22 of mains input transformer is tapped for 200-215; 216-235; 236-250V 40-100 c/s. S6, ganged to the tone control, is the ON/OFF switch.

**Chassis removal.**—Take off the four control knobs and remove back panel of cabinet. Unsolder two leads from loudspeaker tags. Remove the four chassis bolts located on underside of chassis shelf and withdraw chassis.

## TRIMMING INSTRUCTIONS

Apply signal as stated below	Tune Receiver to	Trim in Order stated for Max. Output
(1) 460 kc/s to g1 of V1 via .01 mF	—	Core L16, L15, L14, L13
(2) 1.4 mc/s to AE socket via dummy aerial	215 metres	T5, T2
(3) 600 kc/s as above...	500 metres	Core L9, L4, Repeat (2) and (3)
(4) 16.66 mc/s as above	18 metres	T4, T1
(5) 300 kc/s as above...	1000 metres	T6, T3
(6) 157.8 kc/s as above	1900 metres	Core L11, L6, Repeat (5) and (6)